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## NOTICE OF ALLOWANCE AND FEE(S) DUE

THE NATH LAW GROUP 112 South West Street Alexandria, VA 22314 EXAMINER
BENNETT, JENNIFER D

PAPER NUMBER

ART UNIT

DATE MAILED: 05/06/2011

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591.611	10/15/2006	Daniel McStay	27667U	3396

TITLE OF INVENTION: LED FLUOROMETER WITH REMOTE DETECTION CAPABILITY

05/06/2011

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	08/08/2011

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN <u>THREE MONTHS</u> FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. <u>THIS STATUTORY PERIOD CANNOT BE EXTENDED.</u> SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

#### HOW TO REPLY TO THIS NOTICE:

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If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

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III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

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#### Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE

Commissioner for Patents
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indicated unless correcte maintenance fee notifical	ed below or directed oth tions.	nerwise in Block 1, by (a	rders and notification of n a) specifying a new corres	on FEE (II required in required in required in required in requirements and response required in requi	red). If vill be and/or	mailed to the current (b) indicating a separ	could be completed where correspondence address as rate "FEE ADDRESS" for
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THE NATH LAW GROUP 112 South West Street Alexandria, VA 22314			I her State addr trans	aby cortify that the	ic Ecol	of Mailing or Transt s) Transmittal is being ficient postage for first ISSUE FEE address 1) 273-2885, on the da	nission deposited with the United class mail in an envelope above, or being facsimile te indicated below.
							(Depositor's name)
			_				(Signature)
							(Date)
APPLICATION NO.	FILING DATE		FIRST NAMED INVENTOR		ATTO	RNEY DOCKET NO.	CONFIRMATION NO.
10/591,611	10/15/2006	•	Daniel McStay			27667U	3396
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nonprovisional	NO	\$1510	\$300	\$0		\$1810	08/08/2011
EXAM	INER	ART UNIT	CLASS-SUBCLASS				
BENNETT, J	ENNIFER D	2878	250-559400				
1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).  Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  The Address indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.  3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)  PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.  (A) NAME OF ASSIGNEE  (B) RESIDENCE: (CITY and STATE OR COUNTRY)							
4a. The following fee(s):  Issue Fee  Publication Fee (N	are submitted:  Jo small entity discount p	permitted)	b. Payment of Fee(s): ( <b>Plea</b> A check is enclosed.  Payment by credit care	se first reapply an	y prev	viously paid issue fee s	,
Advance Order - # of Copies The Director is hereby authorized to charge the required fee(s), any deficiency, or credit a overpayment, to Deposit Account Number (enclose an extra copy of this				extra copy of this form).			
5. Change in Entity Stat	<b>tus</b> (from status indicated s SMALL ENTITY statu	, , , , , , , , , , , , , , , , , , ,	☐ b. Applicant is no long	er claiming SMAI	LEN	FITV status See 37 CE	$\mathbb{R}   1   27(g)(2)$
NOTE: The Issue Fee an	d Publication Fee (if req	uired) will not be accepte	d from anyone other than th				
interest as shown by the i	records of the United Sta	tes Patent and Trademark	COffice.				
Authorized Signature				Date			
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This collection of inform an application. Confident submitting the completed this form and/or suggesti Box 1450. Alexandria V	ation is required by 37 C tiality is governed by 35 d application form to the ons for reducing this bu 'irginia 22313-1450. DO	FR 1.311. The informatic U.S.C. 122 and 37 CFR USPTO. Time will vary rden, should be sent to the NOT SEND FEES OR (	on is required to obtain or re 1.14. This collection is estivation of the collection of the collection of the individual of the collection of the complete of	etain a benefit by the mated to take 12 r idual case. Any co r, U.S. Patent and THIS ADDRESS	he publ minutes mment Traden . SENI	lic which is to file (and to complete, including to on the amount of tin nark Office, U.S. Depa D TO: Commissioner for	by the USPTO to process) g gathering, preparing, and he you require to complete rtment of Commerce, P.O. or Patents, P.O. Box 1450

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10/591,611	10/15/2006	Daniel McStay	27667U	3396
20529 75	90 05/06/2011		EXAM	INER
THE NATH LAY		BENNETT, JENNIFER D		
112 South West Str				
Alexandria, VA 22	314		ART UNIT	PAPER NUMBER
			2878	

# Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## **Privacy Act Statement**

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

- 1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
- 2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
- 3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
- 4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
- 5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
- 6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
- 7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
- 8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
- 9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

	Application No.	Applicant(s)				
	10/591,611	MCSTAY ET AL.				
Notice of Allowability	Examiner	Art Unit				
	JENNIFER BENNETT	2878				
The MAILING DATE of this communication appe						
All claims being allowable, PROSECUTION ON THE MERITS IS herewith (or previously mailed), a Notice of Allowance (PTOL-85) NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RI of the Office or upon petition by the applicant. See 37 CFR 1.313	(OR REMAINS) CLOSED in this ap or other appropriate communicatio GHTS. This application is subject to	oplication. If not included n will be mailed in due course. <b>THIS</b>				
1. This communication is responsive to <i>February 22, 2011</i> .						
2. X The allowed claim(s) is/are 1,4-6,8,9,12,16,18,20-35,37 and	<u>d 39-49</u> .					
<ul> <li>3.  Acknowledgment is made of a claim for foreign priority un</li> <li>a)  All b)  Some* c)  None of the:</li> <li>1.  Certified copies of the priority documents have</li> </ul>						
2. Certified copies of the priority documents have	been received in Application No					
3. Copies of the certified copies of the priority doc	cuments have been received in this	national stage application from the				
International Bureau (PCT Rule 17.2(a)).						
* Certified copies not received:						
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.						
4. A SUBSTITUTE OATH OR DECLARATION must be subminification (PTO-152) which give						
5. CORRECTED DRAWINGS ( as "replacement sheets") mus	t be submitted.					
(a) ☐ including changes required by the Notice of Draftspers	on's Patent Drawing Review (PTO	-948) attached				
1) ☐ hereto or 2) ☐ to Paper No./Mail Date						
<ul><li>(b) ☐ including changes required by the attached Examiner's Paper No./Mail Date</li></ul>	s Amendment / Comment or in the 0	Office action of				
Identifying indicia such as the application number (see 37 CFR 1, each sheet. Replacement sheet(s) should be labeled as such in t						
6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.						
Attachment(s) 1. ☑ Notice of References Cited (PTO-892)	5. ☐ Notice of Informal I	Patent Application				
2. Notice of Draftperson's Patent Drawing Review (PTO-948)	6. 🔲 Interview Summary	/ (PTO-413),				
3. Information Disclosure Statements (PTO/SB/08),	Paper No./Mail Da 7. ⊠ Examiner's Amend					
Paper No./Mail Date  4.  Examiner's Comment Regarding Requirement for Deposit of Biological Material	8. 🛛 Examiner's Statem	8. 🛛 Examiner's Statement of Reasons for Allowance				
or biological material	9.					
/Jennifer Bennett/						
Examiner, Art Unit 2878						

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#### **DETAILED ACTION**

#### Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 22, 2011 has been entered.

## Allowable Subject Matter

- 2. Claims 1, 4-6, 8, 9, 12, 16, 18, 20-35, 37, and 39-49 are allowed.
- 3. The following is an examiner's statement of reasons for allowance:

Re claims 1 and 45: The prior art of record individually or in combination fails to teach the fluorometer and method for detecting the level of fluorescent material in a body of water as claimed, more specifically comprising: an excitation system comprising one or more light emitting diodes, further comprising a means to cause excitation light from the light emitting diodes during use to form a generally conical divergent beam projecting form the fluorometer, the beam causing means comprises at least one collimating lens, the excitation system further comprises a means for modulating said beam with a modulation signal having a modulating frequency, a detection system with a lens for detecting a generally conical detection volume that converges in a direction towards the fluorometer and at least partially overlap the

generally conical divergent beam, the detection system receives light and converts it into an electrical signal, said detection system further includes means for detecting, in the electrical signal produced by said light receiving and converting means, a signal component of substantially the same frequency as said modulation frequency, said detecting means including means for performing spectral analysis of said electrical signal and means for determining the value of a spectral component of said electrical signal corresponding to said modulation frequency, wherein said detection system is arranged to determine the level of fluorescent material present in said body of water depending on said value of said spectral component, such that the fluorometer is capable of detecting fluorescent material located remotely from the fluorometer in said body of water.

Claims 4-6, 8, 9, 12, 16, 18, 20-35, 37, 39-41, 44, 46, 47, and 49 are allowed because of their dependency on claims 1 and 45.

Re claim 42: The prior art of record individually or in combination fails to teach the fluorometer for detecting the level of fluorescent material in a body of water as claimed, more specifically comprising: an excitation system comprising one or more light emitting diodes, further comprising a means to cause excitation light from the light emitting diodes during use to form a generally conical divergent beam projecting form the fluorometer, the beam causing means comprises at least one collimating lens, the excitation system further comprises a means for modulating said beam with a modulation signal having a modulating frequency, a detection system with a lens for detecting a generally conical detection volume that converges in a direction towards the

fluorometer and at least partially overlap the generally conical divergent beam, the detection system receives light and converts it into an electrical signal, said detection system further includes means for detecting, in the electrical signal produced by said light receiving and converting means, a signal component of substantially the same frequency as said modulation frequency, said detection system further includes means for detecting, in the electrical signal produced by said light receiving and converting means, a signal component of substantially the same frequency as said modulation frequency, said detecting means including means for performing spectral analysis of said electrical signal and means for determining the value of a spectral component of said electrical signal corresponding to said modulation frequency, wherein said detection system is arranged to determine the level of fluorescent material present in said body of water depending on said value of said spectral component such that the fluorometer is capable of detecting fluorescent material located remotely from the fluorometer at distances of up to several meters from the fluorometer in said body of water, and wherein the excitation system and the detection system are each provided in a respective housing, the respective housings being located adjacent one another and arranged such that there is an overlap, during use, between said generally conical divergent beam emanating from the excitation system housing and said generally conical convergent detection volume of the detection system housing, and wherein the excitation system and the detection system are each provided in a respective housing, the respective housings being located adjacent one another and arranged such that there is an overlap, during use, between said generally conical divergent beam

emanating from the excitation system housing and said generally conical convergent detection volume of the detection system housing, and wherein the respective housings have a respective longitudinal axis, said longitudinal axes being substantially parallel with one another, and said generally conical divergent beam and said generally conical convergent detection volume are substantially aligned with said respective longitudinal axis.

Claims 43 and 48 are allowed because of their dependency on claim 42.

The closest pieces of art have been mentioned previously in other office actions.

Other close art that has not been previously mention is Wilkof et al. (US 20050020926), who teaches a fluorometer that scans LEDs () to form a conical divergent beam over time (paragraph 19 and 20) in order to detect scattered light from an area (see fig. 1 and a FOV is two dimensional claim 21) within a human body or elsewhere (paragraph 10). Some embodiments can be used to detect fluorescence (paragraph 175). Wolkof doesn't teach detection up to several meters and does not specifically teach detecting the level of fluorescent material within the body.

Another piece of art is Holland (US 20050098713), who teaches fluorometer to detect fluorescence (paragraph 11), the device uses LEDs and collimated lenses to send an unfocused beam out several feet (paragraph 42 and abstract), the light emitting diodes are modulated (paragraph 46 and 47) the detector detects fluorescence then analyzes the signal in a processor (paragraph 10). Holland does not specifically teach the detector including means for performing spectral analysis of said electrical signal and means for determining the value of a spectral component of said electrical signal

corresponding to said modulation frequency, wherein said detection system is arranged to determine the level of fluorescent material present in said body of water depending on said value of said spectral component, such that the fluorometer is capable of detecting fluorescent material located remotely from the fluorometer in said body of water.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

## Response to Arguments

4. Applicant's arguments, see Arguments, filed February 22, 2011, with respect to claims 1, 42 and 45 have been fully considered and are persuasive. The rejection of the claims and their dependents has been withdrawn.

#### Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER BENNETT whose telephone number is (571)270-3419. The examiner can normally be reached on Monday - Friday 0900 - 1730 EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Que T. Le/ Primary Examiner, Art Unit 2878

/J. B./